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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/715,540

11/19/2003

John West

101867.56513US

5587

23911 7590 08/29/2006

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EXAMINER

CARIASO, ALAN B

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/715,540	Applicant(s) WEST ET AL.	
	Examiner Alan Cariaso	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,4 and 19-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 is/are allowed.
- 6) ☒ Claim(s) 2 and 19-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment after final under 37 CFR 1.116, August 2, 2006 is acknowledged. The amendment has been entered. Claims 2, 4 and 19-32 are pending.
2. The indicated allowability of claims 2 and 19-31 is withdrawn in view of the newly discovered reference(s) to BIANCHETTI et al (US 6,857,873 B2) and indefiniteness in claim 20. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 20 recite "the proximal end of the light guide is connected to a fused fiber optic image conduit", which is indefinite as being incorrect with respect to the disclosure. Because preceding claim 19 recites "light from the light source travels from the proximal end to the distal end", and instead, Figures 8 and 9 show the distal end of the TIR reflector connected to the image conduit, claim 20 is incorrect.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 2, 19-24 and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by BIANCHETTI et al (US 6,857,873 B2).

8. In regards to claim 2, BIANCHETTI discloses a light guide (optical element 40, figs.1-4B & 7) for use in a dental curing device (col.2, line 52 to col.3, line 2), the light guide (40) comprising an entrance area (seat 41), a lens (convex wall 42, col.5, lines 15-20), at least one reflector (43, col.5, lines 21-29), a light pipe (45, col.5, lines 30-43) and an exit area (48, figs. 4A,4B), wherein the lens (42) and at least one reflector (43) are constructed of a single continuous homogeneous material (col.4, line 56 to col.5, line 9) and wherein the exit area (48) is sized to be placed inside a patient's mouth, either with removal of optical fiber (50, col.4, lines 11-14) and directing the exit area (48) in the mouth, or with the attached optical fiber (50) defining its exit area directed into the mouth (col.3, lines 8-13), such that light is projected onto a single tooth (col.2, line 62 to col.3, line 2 or col.1, lines 25-29) and wherein the light guide (40) consists of single

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material selected from the group consisting of acrylic, plastic and glass (col.2, lines 56-57).

9. In regards to claims 19-24 and 29-31, BIANCHETTI discloses a light guide (optical element 40) for use in a dental light curing device (col.2, line 52 to col.3, line 2), the light guide (40) comprising: a proximal end (seat 41) and distal end (48), wherein the proximal end (41) is designed to receive light from a light source (LED 30) and wherein the proximal end comprises: a reflecting means (43), a refracting means (42), wherein the reflecting means (43) is concave (fig.3) to the light source (30) and reflects light (col.5, lines 26-29) from the light source (30) towards the distal end (48) of the light guide (40), and wherein the reflecting means (43) and the refracting means (42) are constructed of single continuous homogeneous material (col.4, lines 56-63), and wherein the light from the light source (30) travels from the proximal end (41) to the distal end (48) without passing through any substantially air spaces (figs.4A,4B); and as best understood, wherein the distal end (48) is connected to a fused fiber optic image conduit (50); wherein the reflecting means (43) and the refracting means (42) are constructed of acrylic, plastic or glass (col.2, lines 56-57); wherein the light source (30) is selected from a group consisting of at least of LED (col.4, lines 51-55); wherein the light source (30) is a single LED (col.4, line 43) inherently consisting of die or emitter; wherein the light source (30) comprises a domed lens cover (fig.3).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 25-28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over BIANCHETTI et al (US 6,857,873 B2) in view of KOVAC et al (US 6,200,134 B1).

12. Claims 25-28 and 32 recite the light source being a multiple LED and not including a domed lens cover, not disclosed by BIANCHETTI. KOVAC teaches a dental curing device having an LED array of dies (43 in fig. 2, 60 in fig.4) and without any domed lens cover (figs.2 & 4) in contrast to domed covered and much fewer LEDs (30-fig.1) for the purpose of having increased density of light emitters within a compact space in directing light of adequate or increased curing power into the input (66) of the light pipe (67) toward the dental area to be cured, while maintaining relative adequate cooling (col.7, lines 29-67 and col.8, lines 31-34).

13. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the dental curing device of BIANCHETTI et al to include the type of array of dome-less light emitting dies as taught by KOVAC et al in order to increase light intensity with a greater number and density of light emitters within the desired compactness of the device, while provide adequate or increased curing power output from the light guide, and maintain adequate cooling from the dies' convective exposure.

Allowable Subject Matter

14. Claim 4 is allowed.

15. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not suggest a light guide wherein the entrance area, at least one reflector and lens are in a single glass part.

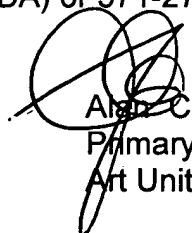
Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. OOSHIMA et al (US 6,181,369 B1) shows a light guide (14, figs.5-7B, col.5, lines 18-31) for dental use (col.1, lines 6-9), the light guide (14, fig.5,) being a single continuous homogeneous plastic material (col.4, lines 64-66) comprising an entrance area (recess 18), a condensing portion (11, fig.1) or at least one reflector (concave mirror 11a, 11b), a light pipe (guiding portion 12) and an exit area (shedding portion 13, fig.7B) directing light from a light source (9). TSIMERMAN (US 5,803,729) shows a curing dental light device that includes an optical solid concentrator (48) optically connected to a solid light guide (34), both made of the same one material of a group including glass and plastic (polycarbonate, polymethylmethacrylate), see col.3, lines 60-64 and col.5, lines 5-6.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Cariaso whose telephone number is (571) 272-2366. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alan Cariaso
Primary Examiner
Art Unit 2875

August 24, 2006
AC